

Abstract

A process for removing trioxane from a mixture I of formaldehyde, trioxane and water,
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a) distilling the mixture I in a first distillation stage at a pressure of from 0.1 to 2 bar
to obtain a stream II which comprises formaldehyde and a stream III which
comprises predominantly trioxane and additionally water and formaldehyde,

b) mixing the stream III with a recycle stream VII which comprises predominantly
trioxane and additionally water and formaldehyde to obtain a stream IIIa which
comprises predominantly trioxane and additionally water and formaldehyde,

c) distilling the stream IIIa, if appropriate after removing low boilers from the stream
III or IIIa in a further distillation stage, in a second distillation stage at a pressure
of from 0.2 to 10 bar, the pressure in the second distillation stage being at least
0.1 bar higher than the pressure in the first distillation stage, to obtain a stream IV
of trioxane and a stream V which comprises predominantly trioxane and
20 additionally water and formaldehyde,

d) distilling the stream V in a third distillation stage at a pressure of from 0.1 to 4 bar
to obtain a stream VI which comprises predominantly water and additionally
formaldehyde, and the recycle stream VII which comprises predominantly
trioxane and additionally water and formaldehyde,

e) if appropriate, distilling the stream VI in a fourth distillation stage to obtain a
stream VIII which comprises predominantly water, and a stream IX which
comprises predominantly formaldehyde.

(Figure)